

Solving Rational Equations

Find the replacement set. Then solve and check.

1. $\frac{1}{9y} = \frac{1}{45}$ _____

2. $\frac{x}{3} + \frac{x}{2} = 10$ _____

3. $\frac{2y}{5} + \frac{2}{6} = \frac{y}{2} - \frac{1}{6}$ _____

4. $\frac{y-3}{5} = \frac{y+1}{7}$ _____

5. $\frac{3}{4y-1} = \frac{2}{3y+6}$ _____

6. $\frac{2}{3} + \frac{3x-1}{6} = \frac{5}{2}$ _____

7. $\frac{4x}{2x^2-4} = \frac{6}{3x+1}$ _____

8. $\frac{2}{6x+2} = \frac{x}{3x^2+11}$ _____

9. $4 - \frac{2y}{y-5} = \frac{8}{y-5}$ _____

10. $\frac{x^2+3x}{x-2} = x + \frac{10}{x-2}$ _____

11. $\frac{4}{x-3} = \frac{2}{x+1} + \frac{16}{x^2-2x-3}$ _____

12. $\frac{7}{x^2-5x} + \frac{2}{x} = \frac{3}{2x-10}$ _____

13. $\frac{2}{x+3} + \frac{5}{3-x} = \frac{6}{x^2-9}$ _____

14. $\frac{x+3}{x^2+3x-4} - \frac{x+2}{x^2-16} = 0$ _____

Applications

15. **Geometry** The length of a rectangle is x in., and its width is $\frac{1}{x}$ in. If the perimeter of the rectangle is 5 in., find the dimensions of the rectangle. _____

16. **Number Problem** The numerator of a fraction is 5 more than the denominator. The fraction is equivalent to $\frac{7}{6}$. Find the original fraction. _____

MIXED PRACTICE

Find the replacement set. Then solve and check.

17. $\frac{3y}{5} + \frac{1}{2} = \frac{y}{10}$ _____

18. $x^2 + 7x = 30$ _____

19. $\frac{3}{2x-4} = \frac{5}{3x+7}$ _____

20. $\frac{1}{2x+2} + \frac{5}{x^2-1} = \frac{1}{x-1}$ _____